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09/802,745	03/08/2001	David John Richardson	DYOUNG0211US	8240

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EXAMINER

SEDIGHIAN, REZA

ART UNIT PAPER NUMBER

2633

DATE MAILED: 11/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/802,745

**Applicant(s)**

RICHARDSON ET AL.

**Examiner**

M. R. Sedighian

**Art Unit**

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.                      6) ☐ Other:

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1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 1, it is not clear what it means by “ ... a plurality of encoding signatures according to the encoding signal ...” and “ ... decoding signature matched to one of the encoding signatures ...”. What does it means by encoding signatures and decoding signature??

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-7, 9, and 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Young et al. (US patent No: 5,760,941).

Regarding claims 1, 15, and 16, as it is understood in view of above 112 problem, Young teaches an optical transmission system (80, fig. 1) comprising: an optical transmitter (100a, 240, fig. 5A) including an input for receiving an encoding signal (the output optical signal of source 240 in fig. 5A) and an encoder (242, fig. 5A) arranged to encode an optical signal (col. 16, lines 24-57) with any one of a plurality of encoding signatures (col. 16, lines 58-61, the output signals b of symbol source 216) according to the encoding signal (col. 16, lines 39-57); a transmission link (82, fig. 1) for conveying the encoded optical signal from the optical transmitter (col. 9, lines

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15-19); an optical receiver (130a, fig. 6A) comprising a grating decoder (242, fig. 6A) connected to receive the encoded optical signal from the input (col. 20, lines 34-43), the grating decoder (col. 20, lines 44-47 and 242, fig. 6A) incorporating a decoding signature matched to one of the encoding signatures so as to decode the encoded optical signal when encoded with the matches one of the encoding signatures (col. 20, lines 47-67, col. 21, lines 1-2, 17-29). As to claim 16, Young teaches the optical signal (the output optical signal of source 240) is modulated (222, fig. 5A) with a content-bearing signal (b, fig. 5A), and the grating decoder (130a, fig. 6A) includes a filter (158, fig. 6A).

Regarding claim 2, Young teaches the transmitter includes a modulator (214, fig. 5A) and the encoding signal (b, fig. 5A) is an electrical signal (col. 16, lines 58-60) connected to the modulator (214, fig. 5A).

Regarding claim 3, Young teaches the modulator is a phase modulator (col. 7, lines 51-62).

Regarding claim 4, Young teaches the modulator is an amplitude modulator (col. 29, lines 60-67, col. 30, lines 1-10).

Regarding claim 5, Young teaches the modulator is an electro-optic modulator (col. 16, lines 64-67).

Regarding claims 6-7, Young teaches the transmitter includes a fiber delay line (col. 23, lines 22-26, col. 25, lines 24-38).

Regarding claim 9, Young teaches the grating decoder additionally incorporates a filtering (158, fig. 6A) function to compensate for signal distortions (col. 14, lines 50-55, col. 22, lines 53-55).

Regarding claim 13, Young discloses the grating decoder is configured to decode a spread-spectrum optical signal (col. 9, lines 15-25).

Regarding claim 14, Young discloses the grating decoder is configured to decode an OCDMA optical signal (col. 20, lines 52-53).

5. Claim 16 is rejected under 35 U.S.C. 102(b) as being anticipated by Tsuda et al. (Electronics Letters, Vol. 35, No. 14, July 8, 1999, pages 1186-1187).

Regarding claim 16, Tsuda teaches an optical transmitter (fig. 2), comprising: an optical source for generating an optical signal (the laser diode in fig. 2) modulated with a content-bearing signal (the modulator in fig. 2) and having a predictable distortion characteristic induced during modulation of the optical signal (the dispersion of the optical transmission system); and a grating decoder (AWG decoder of fig. 2) incorporating a filtering function (the filter that is connected to the dispersion compensating fiber and to the AWG decoder of fig. 2) to compensate for the distortion characteristic and arranged to process the optical signal to compensate for the distortion characteristic (page 1187, the paragraph related to the experimental setup for spectral encoding and decoding of fig. 2).

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al. (US patent No: 5,760,941) in view of Hubbard (US Patent No: 4,217,488).

Regarding claim 8, Young differs from the claimed invention in that Young does not disclose the transmitter includes an electrically driven laser source and the encoding signal is connected as a drive current to bias the laser. Hubbard teaches an optical transmitter (22, fig. 5), wherein the transmitter includes an electrically driven laser source (35, fig. 5) and an encoding signal (the output signal from encoder 32) that drives the laser (34, fig. 5). Therefore, it would have been obvious to an artisan at the time of invention to incorporate an optical transmitter with a laser driver circuitry such as the one of Hubbard for the optical transmitter in the optical encoding system of Young in order to provide a control signal that can directly modulates the optical light source.

8. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al. (US patent No: 5,760,941) in view of Kobrin (US Patent No: 6,087,655).

Regarding claims 10-11, Young differs from the claimed invention in that Young does not disclose the grating decoder comprises a refractive index modulation induced grating. Kobrin teaches a fiber encoder that comprises a refractive index modulation induced grating (see abstract). Therefore, it would have been obvious to an artisan at the time of invention to incorporate a refractive index modulation induced grating encoder such as the one of Kobrin for the decoder of Young in order to further deflect or diffract or shape the optical signals.

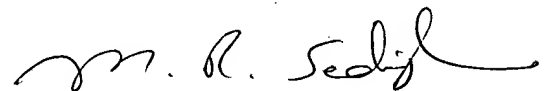
9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al. (US patent No: 5,760,941) in view of Munroe et al. (US Patent No: 6,313,771).

Regarding claim 12, Young differs from the claimed invention in that Young does not disclose the grating decoder is arranged in reflection in combination with a circulator. Munroe teaches an encoder (col. 4, lines 61-65 and 211, fig. 2D) that is connected to a circulator (213, fig. 2D). Therefore, it would have been obvious to an artisan at the time of invention to incorporate an optical circulator such as the one of Munroe along the transmission path in the optical transmission system of Young in order to split or branch or redirect the optical signal for further signal processing or measurements.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (703) 308-9063. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703) 305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

  
M.R. SEDIGHIAN  
Patent Examiner  
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